

ADDITIONS TO THE PHORIDÆ OF FORMOSA
(DIPTERA)¹

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In 1911² the present writer published a list of the Phoridae of Formosa, based on collections made by Mr. Hans Sauter during the years 1907 and 1908. Several years later, in 1911 and 1912 the same collector obtained an additional extensive series which are dealt with in the present paper. The material here considered, like the previous series was loaned from the collections of the Hungarian National Museum by my good friend the late Dr. K. Kertész and the types have been returned to the museum. The first collection contained twenty species, all but one undescribed at that time. The present one includes fifteen species of which eight are new and seven have been previously described; of the latter one is the widespread *Aphiochæta picta* Lehm., another a species known from Java and seven were described from Formosa in my previous paper.

Thirty species are therefore at present known to occur in Formosa, distributed in the following genera: Dorniphora (4), Hypocera (1), Conicera (1), Aphiochæta (21), Phalacrotophora (1), Mallochina (1), and Puliciphora (1). Becker has reported the occurrence of *Aphiochæta flava* Fall., *A. lutea* Meig. and *A. pulicaria* Fall., and described *Aphiochæta fasciventris* which is not recognizable from his description. His *Phora bicolorata* is a synonym of the first species listed below.

Dorniphora egregia Brues.

Ann. Mus. Hungarici, vol. 9, p. 534 (1911). (Phora).

Becker, Suppl. Entom., No. 3, p. 88 (1914) (*Phora bicolorata*).

Brues, Journ. New York Entom. Soc., vol. 23, p. 184 (1915).

This is evidently a common species as there are nine specimens from Kaukau (April, July and August) and Taihorin (May, July, August). It occurs also in Java. The proboscis of

¹Contributions from the Entomological Laboratory of the Bussey Institution Harvard University, No. 239.

²The Phoridae of Formosa. Ann. Mus. Nat. Hungarici, vol. 9, pp. 530-535, 19 figs. (1911).

the female is strongly chitinized, twice as long as the head-height, stout and geniculate at the middle.

The chaetotoxy of the hind tibiæ is variable; in one male the hind tibia bears a bristle at the basal third and one beyond the middle, and in two of the females there is still another at the basal sixth; a single bristle just beyond the basal third is the most common arrangement. The front and mesonotum are sometimes reddish and the hind legs may be entirely yellowish.

Dohrniphora conventa Brues.

Ann. Mus. Nat. Hungarici, vol. 9, p. 535 (1911) (*Phora*)

A long series of over sixty specimens representing both sexes are in the present collection. They are from Taihoku and Anping, taken during April and May.

Dohrniphora mordax Brues.

Ann. Mus. Nat. Hungarici, vol. 9, p. 531 (1911).

A series of nearly sixty specimens of this species was obtained at Anping during May "from a box with papers, etc. which had been eaten by termites and containing also a rat's nest." From this it is probable that this form like several of its congeners develops in decaying animal matter.

Phalacrotophora Enderlein

Phalacrotophora punctifrons sp. nov.

♀. Length 2-2.7 mm. Fulvous yellow, mesonotum darker and pleuræ lighter below; palpi and legs testaceous; front piceous, yellowish near the lower margin; abdomen yellowish black at apex with a black spot at each side of the second segment and a brown one at the side of the third; first, second and third segments with a brown streak across the hind margin, except at the sides. Wings strongly tinged with yellow, the

heavy veins light brown, light veins darker brown. Front slightly more than twice as high as broad. Four proclinate bristles of nearly equal size; upper pair occupying one-third the width of the front, lower pair one-sixth; inner bristle of next row near the eye-margin and well above the post-antennals, inner bristle very close to the eye and but little below the middle of the front; upper row with the lateral bristle very close to the eye, the inner bristle considerably higher, all bristles equidistant; ocellar row of four strong bristles. Ocellar tubercle and median frontal groove distinct; vertex slightly elevated, sharp above. Front covered with sparse, rather strong setigerous punctures. Antennæ small, nearly round, well retracted within their cavities; arista bare, as long as the eye; palpi small, with rather short bristles. Postocular cilia strong, larger near the middle of the eye; cheek with two stout bristles and a series of smaller ones between these and the antennæ. Mesonotum subshining, clothed with minute silky black hairs; two widely separated dorsocentral bristles with several long black hairs between them. Scutellum large, semicircular, with two very strong marginal bristles and a weak hair at each corner. Propleura with three bristles near the coxa, three weaker ones above and a few hairs between. Mesopleura above hairy like the mesonotum, with one stout bristle almost as long as the eye at the lower hind angle of the hairy area. Sides of second segment with a brush of stiff, bristly hairs; third segment with a few scattered black hairs behind, especially at the sides. Fourth segment soft and membranous, very pale; following darker, but still weakly chitinized; last segment narrow, tubular, black, with longitudinally striated chitinous covering. Legs rather stout, the hind pair especially so. Front tibiæ with a single line of close-set setulæ, their tarsi slender; middle tibia with a series of strong setulæ on each side of the scam, the outer row absent, however, on the apical third; hind tibiæ also with two rows, the inner one slightly stronger, with about ten bristles, and the outer one with only eight as it does not extend quite to the tip of the tibia. Hind metatarsus not noticeably thickened. Costa extending barely beyond the middle of the wing, not thickened, its cilia short and densely placed; first section one-fourth longer

than the other two together; third one-third as long as the second; second vein leaving the third at a very acute angle; third vein nearly straight, lying near to the costa; fourth vein arising at the fork, bent at the base, straight beyond; fifth bent just before the middle, but scarcely sinuate; seventh long, nearly straight.

Type and four paratypes from Tainan, Formosa, April.

This is a typical member of the genus with the long narrow front and biserially setulose middle and hind tibiae. Two species of *Aphiochæta* known from Formosa, *A. atriclava* Brues and *A. flaviclava* may be distinguished at once by the shorter front. From *Phalaczotophora jacobsoni* Brues described from Java the present species differs most conspicuously by having the front punctate, not smooth and polished.

Aphiochæta Brues.

As in other parts of the world where Phoridae have been collected, this genus is represented by more species than all the other genera of the family combined, and on account of the large number of Formosan species, a key has been included to facilitate their identification.

KEY TO THE FORMOSAN SPECIES OF APHIOCHÆTA.

1. Hind tibia with only a single row of setæ, placed just inside the posterior edge. 2.
Hind tibiae with a series of setæ, sometimes only on the basal half, just outside the edge, in addition to the inner series. 19.
2. Mesopleura bare 3.
Mesopleura above with a patch of bristly hairs which sometimes includes also a large bristle. 16.
3. Scutellum with two bristles. 4.
Scutellum with four equal, or nearly equal bristles. 14.
4. Costa about half as long as the wing or longer. 5.
Costa very short, about one-third as long as the wing
pygmaea Zett.

5. Front much shortened, twice as broad as high; four proclinate bristles of equal size. *curtifrons* Brues.
Front quadrate, or with the lower proclinate bristles weaker than the upper pair. 6.
6. Halteres black, much darker than the mesonotum. 7.
Halteres pale, much lighter than the mesonotum. 10.
7. Costal vein extending far beyond the middle of the wing; fourth vein curved forward at both base and apex; wings distinctly infuscated. *chipensis* Brues
Costal vein not noticeably more than half the wing-length 8.
8. Four well developed proclinate bristles, setulæ of hind tibiæ well developed. 9.
Only two proclinate bristles, the lower pair reduced to fine hairs, hind tibiæ obsoletely setulose. *meracula* Brues.
9. Costal bristles extremely minute; setulæ of hind tibiæ rather small *meijerei* Brues.
Costal bristles larger, but rather short; setulæ of hind tibiæ long. *sauteri* Brues.
10. First section of costa longer than the second. 11.
Second section of costa longer than the first. 13.
11. Wings hyaline; front about as wide as high; second vein nearly perpendicular to the costa. *nana* Brues.
Wings distinctly infuscated; front wider than high. 12.
12. Costal cilia very short and densely placed; abdominal tergites normal. *formosana* sp. nov.
Costal cilia long and rather closely placed; third tergite reduced in female. *pedicellata* sp. nov.
13. Middle row of frontal bristles forming a straight transverse row; thorax piceous; hind legs very slender.
recta Brues.
Middle row of frontal bristles strongly curved downwards medially; thorax yellowish brown; legs moderately stout.
curva Brues.
14. Costal vein less than two fifths as long as the wing.
insulana Brues.
Costal vein extending to the middle of the wing. 15.

15. Four proclinate bristles on the front; second vein entering the costa almost at a right angle; costa extending distinctly beyond middle of wing. *trivialis* Brues.
Only two proclinate bristles; fork of third vein very acute; costa extending just to the middle of the wing.
brunnicans sp. nov.
16. Scutellum with four bristles; halteres yellow. *ochracea* Brues.
Scutellum with only two bristles; halteres black. 17.
17. Costa about half as long as the wing. 18.
Costa only two-fifths as long as the wing. *breviusecula* sp. nov.
18. One of the mesopleural bristles greatly enlarged; wing broad especially at base. *aemula* Brues.
Mesopleura with the bristly hairs all small; wing long and quite narrow. *simplicior* Brues.
19. Four scutellar bristles; mesopleura bare. . . . *picta* Lehm.
Two scutellar bristles; mesopleura above with bristly hairs and one large bristle. 20.
20. Halteres pale. 21.
Halteres black; mesonotum yellowish brown. *articlava* Brues
21. Front one-third higher than broad; wings hyaline; costa half as long as the wing. *flaviclava* Brues
Front quadrate; wings distinctly yellowish; costa extending well beyond the middle of the wing. *lanceolata* sp. nov.

Aphiochæta meijerei Brues.

Journ. New York Entom. Soc., vol. 23, p. 189 (1915).

This species was described from Java. There are six specimens representing both sexes from Formosa, collected at Anping during April, 1912, and at Tainan during April, May and June, 1912. The female does not differ essentially from the male from which the species was described.

The setæ of the hind tibiæ form a single row just inside the posterior edge, but those of the middle tibiæ are disposed in two rows, one on each side of the hair-seam.

Aphiochæta formosana sp. nov.

♂. Length 1.7-2.1 mm. Head and thorax brown, the front blackened, except at the edges and upper corners; abdomen black, dull yellow on the base of the first segment; segments one to six with dull yellow posterior margins, wider on four and five which have the middle portion brown; antennæ rufous, with the tip of the third joint black; palpi yellow; pleuræ dark brown above, lighter below; legs yellowish brown, the hind femora blackened at tips. Wings with a decided brownish tinge especially around the margins; venation deep brown; halteres pale brown, concolorous with the lower part of the pleuræ. Front distinctly wider than high; four postantennal bristles, the lower pair much weaker and closer together than the upper pair which occupy one-fifth the width of the front; inner bristle of lowest reclinate row on a level with the upper proclinate bristle and midway between it and the eye, the outer bristle well above it and less than half as far from the eye. Upper post-ocular cilium much enlarged, the others all strong and well-developed; cheek with a pair of strong bristles and a line of small ones extending to the antenna. Palpi with very strong bristles at tips. Antennæ rather small; arista stout, pubescent, as long as the head-height. Mesonotum distinctly shining, with one pair of dorsocentral bristles; scutellum nearly as long as wide, with only two bristles, placed near the margin. Propleura with several minute bristles above and several larger ones below. Mesopleura bare. Second segment of abdomen with a conspicuous tuft of bristles at the sides, much longer than the third; third to sixth gradually growing shorter. A marginal row of short bristly hairs on segments two to five; sixth with similar ones on the disc. Hypopygium small, shining, with fine bristly hairs below. Apical lamella large, orange yellow, sparsely hairy, with the two apical bristles small. Front tarsi slightly thickened, the second and following joints each but little more than twice as long as thick, the first three together as long as the tibia. Middle tibia with a row of very weak cilia inside the posterior edge; hind pair with a stronger series of about 10-12 cilia, longest near the middle of the tibia where they are slightly longer than

half the width of the tibia. Wings rather narrow, especially toward the tip, the costa and third vein not at all thickened apically, unusually far apart toward the base; costa just half the length of the wing with very short and densely placed cilia; first section as long as the second and third together; third one-third as long as the second; second vein very oblique, the cell narrow; fourth vein faintly curved near base, straight beyond; fifth and sixth each bisinuate, nearly parallel on the basal half and strongly divergent apically; seventh almost straight. In one wing the fourth vein is furcate near the tip where it gives off an oblique forwardly directed branch, an abnormality which I have never seen in any other Phorid.

Type, four paratype males and one female all from Taihoku, Formosa, May 1912 (Sauter).

In Lundbeck's table of European species (Diptera Danica, Pt. 6, p. 212) this runs to *A. uliginosa* Wood, from which it differs by the brownish wings and extremely short costal cilia. The thorax is also much lighter colored than in the European species. It is not very similar to any described oriental species.

The female is essentially like the male, with the front tarsi equally thickened; the costa is slightly, but quite distinctly longer than half the length of the wing.

***Aphiochæta pedicellata* sp. nov.**

♀. Length 2.0 mm. Thorax dull ferruginous, the mesonotum fuscous; legs dark brownish yellow; front black, whitish pollinose; abdomen piceous or black, the fourth segment with a yellowish stripe on each side of the median line; antennæ rufopiceous; palpi dark yellow. Wings distinctly tinged with brown, venation clear yellowish brown. Halteres light yellow. Front broad, fully one-half wider than high; its bristles strong, more nearly perpendicular to the surface of the front than usual; four postantennal bristles, the lower pair considerably smaller and not much more approximate than the upper which are separated by one-fourth the width of the front; inner bristle of lowest reclinate row midway between the upper proclinate bristle and on a level with it; lateral one but little higher, close to the eye;

upper row forming a nearly straight line, its bristles equidistant with the lateral one close to the eye; ocellar tubercle and median frontal groove distinct. Antennæ small, round; arista strongly pubescent, one-fourth longer than the head height. Palpi rather large, with strong marginal bristles near tips. Cheeks each with three strong downwardly directed macrochætæ and a series of smaller bristles extending to the base of the antenna. Mesonotum rather long, highly convex; one pair of dorsocentral bristles set as far apart as the lateral corners of the scutellum. Scutellum nearly twice as broad as long, with two marginal bristles, but no trace of a second pair. Propleura with a tuft of small bristles above, several more below near the coxa and a series of minute ones between, along its posterior margin. Mesopleura entirely bare. Abdomen with some short hairs at the sides of the second and third segments, but without distinct lateral tufts; first three tergites completely chitinized; fourth with a short basal chitinized band and a very narrow median stalk-like chitinized strip, but with the sides entirely membranous; segments five and six chitinized as usual (these may be the sixth and seventh if two segments are included in the structure described above as the fourth, which I think may possibly be the case); next segment short and very narrow, pale; last narrow, tubular, black. Legs rather slender; fore tarsi slightly, but distinctly thickened, the second and following joints but little more than twice as long as broad. Cilia of hind tibia in a single row, rather delicate, the larger ones near the middle of the tibia about two thirds as long as its width; internally at the tip the hind tibia bears three comb-like transverse rows of minute bristles. Costa extending to distinctly beyond the middle of the wing, its bristles long and rather closely placed; first section barely longer than the second; third nearly half as long as the second (22:19:9); fork of third vein not very acute, the cell rather large; fourth vein strongly curved near base, more weakly so beyond, recurved at the extreme base; fifth nearly straight; sixth weakly bisinuate, seventh faintly curved.

Type from Taihorin, Formosa, July, 1911 (Sauter).

This is a very distinct species, resembling the Formosan *A. curtifrons* Brues, from which it differs by the long costal cilia.

The reduction of the abdominal tergites is somewhat similar to that of several European species, a character formerly overlooked, but recently described by Lundbeck and Schmitz.

Aphiochæta insulana Brues.

Ann. Mus. Nat. Hungarici, vol. 9, p. 542 (1911).

There are upwards of 150 females from Anping, Formosa, April to June, 1912. The species varies greatly in size, ranging from 1.4 to fully 2 mm. in length.

This species resembles *A. curtineura* Brues from the Philippines, but there are four strong scutellar bristles, instead of two and the mesopleura is bare; the propleura bears a large, conspicuous bristle at its posterior angle just below the spiracle.

Six males in the collection, also from Anping, possibly represent the other sex of this species. They are much darker with the thorax fuscous and the legs dull brown. The abdomen is black, with narrow apical whitish bands at the apices of all the tergites. The scutellum bears only two bristles. If these should prove to be the male, the species must be like a few other members of the genus dimorphic, the males having two and the females four scutellar bristles.

Aphiochæta brunnicans sp. nov.

♀. Length 2 mm. Thorax above brownish yellow; front piceous, somewhat lighter below; abdomen black, with very narrow pale posterior borders on segments 1 to 4; antennæ piceous; palpi pale yellow; pleuræ fuscous, much paler below; legs light brownish yellow, tips of hind femora blackened; halteres pale brownish; wings distinctly tinged with brownish yellow, the venation fuscous, the discal veins heavy. Front quadrate or barely wider than high; ocellar tubercle and median groove present. Only two proclinate postantennal bristles, but these are large and strong, set half as far from one another as from the eye-margin; inner bristle of lowest reclinate row on a level with the proclinate bristle and midway between it and the eye-margin,

the outer bristle close to the eye and only slightly higher than the inner one; middle row of four equidistant bristles, the lateral ones very close to the eye and set distinctly higher than the middle ones; ocellar row of four bristles, uppermost postocular cilium very much enlarged, directed upward and inward, lower cilia somewhat enlarged; cheek with a pair of macrochætæ; a series of four strong bristles between them and the base of the antennæ; antennæ of moderate size, with a stout pubescent arista as long as the head-height. Palpi rather large, closely and strongly bristled. Mesonotum quite shining; with a bristle above the spiracle and two dorsocentral macrochætæ; scutellum nearly twice as wide as long, with four large bristles behind, the lateral pair distinctly smaller, but still well developed. Propleura bristly above, along the posterior margin, and with three rather strong bristles just above the coxa. Mesopleura bare. Abdomen with segments two to six of nearly equal length, the second at the sides with a very noticeable tuft of bristles; sixth at the tip with a fringe of bristly hairs; all tergites fully chitinized. Legs moderately stout, but not thickened; anterior tarsi slender middle tibiæ with a series of extremely minute cilia just inside the posterior edge; hind tibia with a similar series of rather small cilia which are stronger near the middle and weaker at base and apex. Costa extending just to the middle of the wing, with rather short, very closely placed cilia; first section slightly longer than the other two together; second three times as long as the third, the second vein leaving the third at a very acute angle, so that the lower side of the cell is twice as long as the upper; fourth vein curved at the base, but almost straight beyond, originating distinctly beyond the fork of the third vein; fourth and fifth very slightly sinuous; seventh faintly curved; wing large and rather narrow. Halteres brownish yellow.

Type from Tiahoku, Formosa, April 1912 (Sauter).

This species resembles *A. humeralis* Zett, but differs in the weak cilia of the hind tibia, very much higher front and non-thickened costa. From *A. rubricornis* Schmitz it differs by the absence of the lower postantennal bristles, weaker cilia of the hind tibiæ and in the course of the fourth vein. From *A. errata* Wood it differs by the longer first costal division and absence of

a distinct intraalar bristle. Among the previously known Formosan species it resembles *trivialis* Brues most closely, but differs conspicuously in color and wing venation.

Aphiochæta ochracea Brues.

Ann. Mus. Nat. Hungarici, vol. 9, p. 543 (1911).

There is an additional female from Taihoku, April 1912 (Sauter). This specimen differs from the type, which was from Takao, in having the abdomen generally blackened above, but I can find no structural differences.

Aphiochæta breviscula sp. nov.

♂. Length 1.3 mm. Dark brown or piceous, the head and abdomen darker, almost black, and the pleuræ lighter below; legs yellowish brown, the hind pair much infuscated and the front pair much lighter; antennæ piceous; palpi pale yellow; apical lamella of hypopygium yellowish brown; halteres very dark brown or black. Wings hyaline, veins piceous, the thin veins very distinct. Front very slightly higher than broad, with the ocellar tubercle and median frontal line distinct. Four proclinate post-antennal bristles of very nearly equal size; upper pair more than twice as far apart as the median ones, midway between the median line and the eye margin and on a level with the inner bristle of the row above; outer bristle of lowest reclinate row next to the eye, the inner one well below it and twice as far from it as from the eye-margin; upper frontal row of four equidistant bristles with the lateral ones very close to the eye, curved downwards medially; median pair of the ocellar row very large, two-thirds as long as the height of the front. Cheek with three stout bristles. Antennæ small; arista densely pubescent, one-fourth longer than the front. Palpi of moderate size, with rather strong bristles. Mesonotum quite shining, closely and finely hairy over its entire surface. One pair of dorsocentral bristles, without any smaller bristles between them. Scutellum twice as broad as long, with one pair of very

large bristles, much stronger than the dorsocentrals, but with no trace of the second pair. Second abdominal segment slightly lengthened; third to sixth of equal length; dorsum and sides without hairs or bristles, except for some small hairs on the sixth segment. Hypopygium smooth, without bristles; apical lamella of moderate size, with two upturned bristly hairs at tip; when well extruded the hypopygium shows two large ventral hook-shaped pieces and one or two long slender curved bristles below and above near the base. Propleura with several stout bristles just above the coxa and one very small one above near the spiracle; mesopleura with a patch of bristly hairs above and one very large backwardly directed bristle at the lower posterior corner of the bristly area. Wing rather broad, evenly oval. Costa two-fifths as long as the wing, closely ciliate, the cilia short at base, but apically somewhat longer than the second costal division; first division one and one-half times as long as the other two together; second barely longer than the third; second vein rising abruptly to the costa; third vein very widely separated from the costa at the base; fourth vein weakly and evenly curved, recurved at extreme tip; fifth weakly bisinuate, ending as far from the wing tip as the fourth; sixth strongly bisinuate; seventh curved, long. Front legs with the tarsi thickened, the metatarsus nearly as thick as the tibia; middle tibia with six or seven very small setæ on basal three fourths; hind tibia with a series of about eleven, very minute basally but longer beyond the middle of the tibia; hair-seam along the posterior edge curved outwards toward the tip.

Female essentially like the male, but larger, 1.5 mm. in length; dorsal abdominal plates, including that of the third segment of full width.

Male type and five paratypes and two females from Anping, Formosa (Sauter) collected during April and May 1912.

On account of the bisetose scutellum, very short costa and bristly mesopleura with one large bristle this species is close to three European species described by Wood. From *A. hirsuta* it differs by the pale palpi; from *A. spinata* by the long costal cilia and shorter first section of costa; and from *A. pectoralis* by the pale palpi. These species are widely separated in Wood's

tables, but Lundbeck has grouped them together with a few other European species on the basis of the two scutellar bristles, very short costa and the enlarged bristle with a patch of small ones on the mesopleura above.

***Aphiochaeta simplicior* sp. nov.**

♂. Length 1.9 mm. Black, the lateral margins of the mesonotum fuscous; pleuræ fuscous above, yellowish brown below; front legs light brownish yellow; middle and hind ones much darker, fuscous, with the posterior surface of the tibiæ almost black; palpi and terminal lamella of hypopygium honey yellow or brownish. Wings strongly tinged with brown, venation piceous. Halteres black. Front about one-fourth wider than long; four post antennal bristles, all large, but the upper considerably stronger and placed unusually far above the lower ones; upper pair separated by a little more than one-third of the width of the front, the lower pair half as far apart; bristles of lowest reclinate row rather close together at the side of the front, their bases indicating a line 45° from the vertical; lateral one on a level with the upper postantennal and very close to the eye; next row above of four equidistant bristles forming a line that curves slightly downward at the middle; ocellar row large and strong like the others; ocellar tubercle and median frontal groove well developed, the surface of the front slightly pollinose. Antennæ rather large, oval; arista slightly longer than the head height, very thinly pubescent. Palpi with long stout bristles apically. Cheeks each with three strong downwardly directed bristles and a row of short ones between these and the antenna. Mesonotum rather shining, almost bare in front; highly convex; one pair of dorsocentral bristles, with irregular bristly hairs between them. Scutellum rather long, scarcely twice as broad as long, with two large marginal bristles and two microscopic hairs. Propleura with four bristly hairs above and four longer ones below, but with none between these. Mesopleura above with a patch of bristly hairs, but without any greatly enlarged bristles although those near the posterior margin are distinctly larger. Abdomen with the second and sixth segments slightly length-

ened; second with a very inconspicuous tuft of minute bristles laterally, otherwise the first four segments are practically bare; fifth and sixth with scattered fine bristly hairs. Hypopygium small, almost bare. Wings long and quite narrow; costa extending to barely beyond the middle, the costa and second vein close together; costal cilia closely placed and rather short, about three times as long as the thickness of the costa; first section as long as the second and third together, the third fully half as long as the second; fork of third vein acute; fourth vein gently and evenly curved, with recurved tip; fifth almost straight; sixth very weakly sinuate; seventh gently curved. Legs rather slender; front tarsi not thickened. Middle tibia with delicate but distinct setulæ; those of the hind tibiæ rather strong, in a single line just inside the seam; hind metatarsi conspicuously spinose beneath.

Type from Taihoku, Formosa, April 1912 (Sauter).

This species resembles the Formosan *A. canaliculata* Brues in the mesopleuræ and wings, but differs by the different proportions of the costal divisions and much shorter costal cilia. Among the European species it will run to *A. armata* Wood in Lundbeck's table (Diptera Danica, pt. 6, p. 219) from which it differs by the brown wings, darker palpi, shorter first costal division, and concealed ventral process of hypopygium.

***Aphiochæta picta* Lehmann.**

A single female of this species from Kankau, July 1912, considerably extends the range of this species which is already known from Europe, North America and southern Africa.

***Aphiochæta lanceolata* sp. nov.¹**

♀. Length 1.5 mm. Head, thorax and legs in great part brown; abdomen black. Front yellowish below, infuscated above, the ocellar triangle black; antennæ deep yellow, darker at apex; palpi pale yellow; mesonotum fuscous, lighter behind and yellowish on the sides behind the wings. Pleuræ and four posterior coxæ light fuscous; front legs yellowish, middle ones

more brown and hind ones darkened beyond the base of the femur; wings distinctly yellowish, venation light brown. Front quadrate; median line and ocellar tubercle distinct; four large postantennal bristles, the lower ones slender, close together; upper ones widely separated, as far from the median line as from the eye-margin, well above the lower ones and on a level with the inner bristle of the lower reclinate row which is close to the eye margin and directly below the lateral bristle; next row of four equidistant and distinctly bowed downward medially. Antennæ small, arista nearly bare, scarcely one half longer than than the head-height. Palpi with strong bristles below. Cheeks each with two downwardly directed bristles and a row of several smaller ones extending toward the antenna. Mesonotum subshining, with one pair of dorsocentral bristles and a strong bristle at the lateral margin just anterior to them; scutellum one-half broader than long, with only two bristles. Propleura with a few scattered minute hairs and three bristles at the base of the anterior coxa; mesopleura finely bristly above, with one large backwardly directed bristle inserted at the upper posterior angle. Abdomen with the third segment elongated, one-half longer than the second which has a small tuft of long bristles at the sides; fourth segment not abbreviated; ovipositor pale yellowish. Anterior tibiæ without setulæ, their tarsi slender; middle tibiæ weakly setulose inside the seam and with a row of setulæ outside the seam on the basal half; posterior ones similiar, but the setulæ are moderately strong in both rows, numbering seven or eight and being over half as long as the width of the tibia. Wings very narrow; costal vein extending well beyond the middle, with very short and fine, closely placed bristles; first section as long as the second and third together, the third nearly half as long as the second. Third vein running nearly parallel to the costa, but approaching it more rapidly beyond the fork which forms a very acute angle; fourth vein curved only at the base, ending no nearer to the wing-tip than the fifth; fifth, sixth and seventh nearly straight. Halteres yellowish white.

Type from Taihorin, Formosa, July 1911 (Sauter).

This species is related to *A. ciliata* Zett and the several

similar palæarctic species, and especially to *A. flavescens* Wood, from which it differs at once in having the fourth abdominal segment of normal size in the female. From all the members of this group it may be separated by the presence of the second series of setæ on the hind tibia.

***Mallochina sauteri* sp. nov.**

♂. Length 1.0 mm. Black, slightly brownish on the pleuræ and the sides of the mesonotum in front; legs brownish yellow, the hind pair considerably darker; palpi pale yellow; antennæ brownish basally, but black at tips; dorsal lamella of hypopygium fuscous. Wings hyaline, heavy veins dark brown, light veins very delicate; halteres piceous. Front quadrate or slightly higher than broad, with three transverse rows of four bristles each and four post-antennal bristles. Upper post-antennals occupying one-third the width of the front; lower ones smaller and closer together; bristles of lower reclinate row forming a pair at each lower angle of the front, the inner one on a level with the upper post-antennal and almost directly below the outer bristle, although not quite so close to the eye; upper row slightly curved downwards medially, its bristles equidistant; ocellar row as usual; ocellar tubercle and median frontal groove present. Antennæ of moderate size; arista nearly bare, as long as the head-height. Palpi small, with the usual bristles of moderate size; cheeks each with a pair of very large bristles. Mesonotum distinctly shining, with one pair of small, widely separated dorsocentral bristles close to the posterior margin. Scutellum twice as broad as long with a single pair of very long bristles. Propleura with two minute bristles just above the coxa; mesopleura hairy above, with one or two small bristles at the lower posterior corner of the patch of hairs. Abdomen with the fifth segment slightly elongated; upper surface bare, no hairs at the sides of the second segment. Hypopygium minutely bristly at the sides and below. Legs slender, the front tarsi somewhat stouter than usual, but not greatly thickened, the metatarsus much narrower than the tibia. Middle and hind tibiæ with distinct hair-seam along the upper edge, and with a single row

of extremely delicate setulæ. Single spur of middle tibia more than half as long as the metatarsus; spur of hind tibia much shorter. Costa barely, but distinctly less than half the length of the wing; cilia rather short and sparse, with about 15 in each of the two rows. First section of costa almost twice as long as the second; first vein unusually slender; second not forked at tip, slightly thickened on its apical half, fourth vein gently and evenly curved, fifth and sixth weakly bisinuate; seventh nearly straight.

Type and paratype from Anping, Formosa, April 1912. Named in honor of Mr. H. Sauter whose vast collection of insects from Formosa have enormously increased our knowledge of its fauna. A third specimen (Anping, May 1912) without head probably belongs here also.

This species is closely related to *M. exempta* Becker, the type and only species of *Mallochina*. It differs in the quadrate front, more slender front tarsi, longer costa and comparatively longer first costal division.